

Literature Review Middle Grades Reform

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LITERATURE REVIEW

MIDDLE GRADES REFORM

At A Glance

Researchers and policymakers have pointed to the lagging scores of eighth graders on international, national, and state assessments as evidence that students are not prepared to meet high academic standards and that middle grades reform is needed. In response to these concerns, educators have introduced reforms designed to provide middle-level students with academically challenging instruction and developmentally responsive programs. This literature review summarizes the components of effective middle grades reform efforts. Research conducted on the impact of middle grades reform on student academic and behavioral outcomes and on the issue of grade configuration is also reviewed.

Educators and researchers have long debated the most effective way to deliver middle-level education. Most recently, they have suggested that middle schools lack academic rigor and fail to provide activities that encourage adolescents' social, emotional, and physical growth. Researchers and policymakers have pointed to the lagging scores of eighth graders on international, national, and state assessments as evidence that students are not prepared to meet high academic standards and that middle grades reform is needed (Manzo, 2008; National Middle School Association, 2006; Juvonen et al., 2004; Heller et al., 2003). Furthermore, students' entries into middle school are often marked by disengagement from school; lower levels of academic achievement; increased referrals to mental health services; and the start of disciplinary and attendance problems (Shulman & Armitage, 2005; French, 2003; Elias, 2001). In response to these concerns, educators have introduced reforms designed to provide middle-level students with academically challenging instruction and developmentally responsive programs and policies (National Center for Education Statistics, 2000).

In the past, the debate over middle grades reform revolved around claims that programs either focused too heavily on developmental factors at the expense of academics or emphasized academics without considering students' social, emotional, and physical development (National Association of Secondary School Principals, 2006). Middle grades reformers now agree that schools must simultaneously emphasize students' academic and developmental needs, as they prepare them for challenging studies in high school (American Youth Policy Forum, 2006; Cooney & Bottoms, 2003; National Forum to Accelerate Middle-Grades Reform, 2006; Clark & Clark, 2000).

Any discussion of middle grades reform should also alert the reader to what Heller and associates (2003) termed the "middle grades paradox." On the one hand, reformers insist that the middle grades represent a unique developmental stage and they advocate the implementation of programs and policies specifically tailored to the intellectual and emotional needs of young adolescents. On the other hand, most of their recommendations apply to students at every grade level, not just middle-level students. For example, reformers suggest creating smaller learning environments, involving families and communities, and retaining highly qualified teachers at all types of schools. The National Center for Education Statistics (2000) aptly pointed out that, although middle schools serve the unique needs of their young adolescent populations, they share many characteristics with other types of schools.

History of Middle-Level School Structures

Until the early 1970s, most U.S. middle-level students attended junior high schools. Junior high schools were structured like high schools, with similar teaching and disciplinary methods, departmentalized classes, and uniform daily class periods. However, critics of junior high schools argued that they lacked a clear educational mission and were ignoring the developmental needs of early adolescents. These criticisms prompted many school districts to replace their junior high schools with middle schools. The middle school model adopted a new grade configuration (grades 6-8, instead of grades 7-8 or 7-9) and introduced organizational and instructional practices believed to be more appropriate for young adolescents. By the 1990s, middle schools had replaced junior high schools as the dominant school structure in the U.S. In the late 1990s, however, middle schools came under attack for stressing students' social and emotional needs and not placing enough emphasis on their academic performance (Brown et al., 2004; RAND Education, 2004; Heller et al., 2003; Pardini, 2002; Paglin & Fager, 1997).

The U.S. still does not have a cohesive national policy for the middle grades. Currently, many school districts are disbanding their middle schools and creating smaller K-8 school structures thought to better serve middle-level students' needs (Weiss, 2008; Byrnes & Ruby, 2007). The elementary (or K-8) environment differs from the middle school environment in several important ways (Byrnes & Ruby, 2007; Cook et al., 2007; Pardini, 2002; National Center for Education Statistics, 2000):

- Sixth graders in elementary schools are usually assigned to one teacher and spend most of the day in that classroom with the same group of students. These self-contained classrooms allow teachers to closely monitor students' progress and provide a stable environment for young students. In contrast, sixth graders in middle schools are usually assigned to a team of teachers and move from classroom to classroom, with different groups of students in each class. This arrangement provides students with teachers who have in-depth, subject-specific knowledge and offers them some choice in course selection.
- Middle schools place a greater emphasis on discipline and academic accomplishment and provide fewer opportunities for close relationships with teachers.
- Middle schools are more likely to offer specialized programs and facilities, such as science labs, foreign language courses, and co-curricular programs.
- Sixth graders in elementary schools are among the oldest students in the school, while sixth graders in middle schools are among the youngest.
- Middle schools generally have larger student enrollments than elementary schools.

Components of Effective Middle Grades Reform

Mizell (2003) stated that when educators claim "middle schools don't work," they should really be saying that "middle schools don't work the way we choose to operate and support them." Researchers have concluded that successful middle grades reform efforts include the following components:

- **Comprehensive reform.** Research suggests that middle-level reforms implemented independently of one another are unlikely to produce positive student outcomes. Reform efforts must be interdependent and coordinated throughout the school (National Middle School Association, 2006; Lipsitz et al., 1997a; Rutherford et al., 1995).
- **Gradual restructuring.** Feist (2003) suggested that reforms be phased in at a cohort of schools to ease the restructuring process. She also noted that districts that provided schools with a year of planning time reported smoother transitions.
- **Clearly articulated mission.** Middle-level schools should have a clearly articulated mission (Brown et al., 2004). Most reformers agree that the primary mission in the middle grades is to prepare students for challenging studies in high school (Cooney & Bottoms, 2003; Bottoms & Carpenter, 2003).

- **Rigorous academic curriculum.** High-performing middle-level schools provide a challenging curriculum that allows students to develop their analytical and problem-solving skills. Curriculum and instruction should be aligned with high standards, integrated across disciplines, and connected to the real world. Students should be provided with the opportunity for both independent learning and learning in cooperation with other students (Andrews et al., 2007; National Association of Secondary School Principals, 2006; National Forum to Accelerate Middle-Grades Reform, 2006; National Middle School Association, 2006; Swaim, 2003; Davis & Jackson, 2000).

Reformers recommend that students be required to read 25 books or the equivalent across the curriculum each year. In addition to teacher-selected texts, middle-level students need opportunities to choose their own reading materials from a variety of genres and difficulty levels (Bottoms & Carpenter, 2003; Cooney & Bottoms, 2002a; Ivey, 1998).

Reformers also suggest that middle-level schools teach pre-algebra or Algebra I to all grade 8 students (Bottoms & Carpenter, 2003; Cooney & Bottoms, 2002a). Studies indicate that students who begin algebra earlier are more likely to succeed in an accelerated math curriculum in later grades (Cooney & Bottoms, 2003).

- **Comprehensive and balanced assessment practices.** In effective middle-level schools, teachers use a range of assessment methods, including standardized tests, to measure student performance and progress. Students are provided with varied opportunities to demonstrate their mastery of skills. Assessment results guide instruction and address any gaps in learning that are revealed (Andrews et al., 2007; National Association of Secondary School Principals, 2006; National Forum to Accelerate Middle-Grades Reform, 2006; National Middle School Association, 2006; Wimberly & Noeth, 2005).
- **Developmentally responsive policies and programs.** Although middle-level schools should focus on students' mastery of content and intellectual development, they should not ignore students' developmental needs. Developmentally responsive middle-level schools support the intellectual, social, psychological, and physical needs of early adolescents (Austin Independent School District, 2008; Caskey & Anfara, 2007; National Forum to Accelerate Middle-Grades Reform, 2006; Mizell, 2003; Lipsitz et al., 1997b). Reformers have suggested that middle-level schools implement the following strategies to create a developmentally responsive environment (Austin Independent School District, 2008; Caskey & Anfara, 2007; Mertens, 2006; Mizell, 2003; Clark & Clark, 2000):
 - use instructional approaches that are developmentally appropriate (strategies that recognize the adolescent years are a period of intellectual growth in which students begin to think more abstractly and are developing their ability to analyze how they actually think);
 - provide adult role models through mentoring programs, co-curricular programs, community service, and career exploration programs;
 - provide students with numerous opportunities to form positive relationships with their peers;
 - implement affective strategies that strengthen students' academic development (for example, cooperative learning groups that allow students to interact with their peers while developing academic proficiencies);
 - provide opportunities for students to build self-esteem, autonomy, and a sense of responsibility;
 - provide students with opportunities for physical activity, as well as periods of rest;
 - create a peer mediation center to address issues students do not wish to discuss with their parents; and
 - collaborate with local agencies to increase school safety and reduce violent and risky behaviors.
- **Educational equity.** Hambrick and Svedkauskaite (2005) stated that educational equity does not mean every student should receive the same instruction, but that every student should receive what he or she needs to succeed. Successful middle-level schools provide every student with the

same high quality teachers, resources, learning opportunities, and supports, regardless of ethnicity, gender, socioeconomic status, and academic ability (NYC Coalition for Educational Justice, 2008; California Department of Education, 2006; National Association of Secondary School Principals, 2006; National Forum to Accelerate Middle-Grades Reform, 2006; National Middle School Association, 2006; Lipsitz et al., 1997b). The National Forum to Accelerate Middle-Grades Reform (2006) specified that equitable schools share the following characteristics:

- all students have equal access to all classes and activities;
 - students learn about and appreciate their own and other's cultures;
 - every child is respected;
 - the school values diversity and democratic citizenship; and
 - the faculty is culturally and linguistically diverse.
- **Student engagement.** Compared to elementary and high school students, middle-level students are more likely to report feeling bored at school, more doubtful of their academic ability, and uncertain of the value of their studies (Heller et al., 2003). Middle-level classroom practices most likely to result in high levels of student engagement include (Austin Independent School District, 2008; California Department of Education, 2006; National Association of Secondary School Principals, 2006; National Forum to Accelerate Middle-Grades Reform, 2006; Rich, 2005; French, 2003; Heller et al., 2003; Educational Research Service, 1998):
 - personalizing learning experiences by connecting instruction to students' interests;
 - building variety into instruction to encourage curiosity, exploration and creativity;
 - using non-traditional student-centered strategies, such as cooperative learning groups, experiential learning, and student projects;
 - matching task difficulty to students' capabilities;
 - accommodating students' individual learning styles;
 - providing feedback;
 - incorporating physical activity into instruction;
 - encouraging students to take responsibility for their own learning;
 - giving students choices and a sense of control over what they study;
 - emphasizing cooperation and effort instead of competition; and
 - allowing students to explore a variety of topics to help them discover their unique interests and abilities.
 - **Flexible scheduling.** Flexible scheduling is defined as the creative use of time in the school day to match students' learning needs. Daniel (2007a) stated that the school's schedule influences the degree to which educators can respond to the needs of their students. Middle-level schools implementing flexible schedules typically lengthen instructional periods from 40-50 minutes to 75-150 minutes. Most exemplary middle-level schools use some form of flexible scheduling, although the research literature is inconclusive as to its impact on students' academic achievement (Heller et al. 2003). Benefits of flexible scheduling include (National Forum to Accelerate Middle-Grades Reform, 2006; Daniel, 2007a; Hackmann et al., 2002; Wunderlich et al., 2000):
 - teachers have greater flexibility in planning instructional activities, such as field trips and lab sessions;
 - students can engage in extended projects;
 - teachers can vary instructional formats to accommodate individual students' learning needs; and
 - students are eased into the transition from self-contained elementary schools to highly departmentalized high schools.
 - **Interdisciplinary teaming.** Over the past few decades, interdisciplinary teaming has emerged as a defining feature of middle grades reform. Interdisciplinary teaming refers to small groups of teachers working together over a sustained period of time, focusing on interdisciplinary connections. Teams consist of two or more teachers from different subject areas and the students

they commonly instruct. Advantages of interdisciplinary teaming include the creation of more personalized learning environments that increase students' sense of belonging; the development of supportive and stable relationships among teachers and students; and increased opportunities for teachers to collaborate with colleagues (National Middle School Association, 2006; Mertens & Flowers, 2004a; Mizell, 2003; Hackmann et al., 2002; Williamson, 1996).

Teams usually range in size from two teachers and 40-60 students to six teachers and 150-190 students. Most schools favor smaller teams of two to three teachers (George & Alexander, 2003; Hackmann et al., 2002). Jackson and Davis (2000) recommended that teams be no larger than five teachers and 125 students.

Research is inconclusive regarding teaming's impact on academic achievement, although students and teachers in schools that have implemented teaming do consistently report more positive and productive learning environments (Mertens & Flowers, 2004a; Hackmann et al. 2002). Smaller teams appear to be more effective than larger teams. Flowers, Mertens, and Mulhall (2003) found that students on smaller teams (usually 60 students or less) reported higher levels of self-esteem and academic efficacy and fewer behavioral problems. Erb and Stevenson (1999) found that teams of 120 or fewer students with no more than 25 students per teacher engaged in instructional practices that were linked to positive student outcomes more often than larger teams. Felner and associates (1997) concluded that teams exceeding 120 students, with student-teacher ratios over the mid-20s and less than four common planning periods per week, had little impact on instructional practices or student outcomes.

Regardless of the size of the interdisciplinary team, reformers recommend that teams be characterized by heterogeneous student placements (Daniel, 2007b; Hackmann et al., 2002). Jackson and Davis (2000) stated that "each team should be a microcosm of the overall school population, which means grouping heterogeneously with regard to ethnic and socioeconomic background, gender, special education status (if possible), and past academic achievement."

Research has indicated that in order for interdisciplinary teams to be effective, teachers need regular time to plan and work together. Common planning time enables teachers to coordinate and integrate curriculum, instruction, and assessment; engage in mutual problem solving; conduct student-parent conferences; determine how interdisciplinary blocks will be scheduled; and discuss student needs (Mertens & Flowers, 2004a; Hackmann et al., 2002; Flowers et al., 1999). Flowers, Mertens and Mulhall's (2003) research indicated that teachers need to meet for common planning time at least four times each week for 30 minutes or more to achieve consistent positive outcomes. They found that students in schools that were teaming with high levels of common planning time demonstrated significantly higher achievement gain scores than students in schools that were not teaming or that were teaming with low levels of common planning time. In addition, schools that were teaming with high levels of common planning time reported that teachers more frequently integrated classroom instruction and that students had fewer behavioral problems and higher levels of self-esteem and academic efficacy.

- **Multiage grouping.** Some middle grades reformers have begun to promote the practice of multiage grouping (sometimes referred to as multigrade grouping). According to George and Lounsbury (2000):

"Multiage grouping in middle schools is an organizational strategy in which students of different ages, ability levels, and interests are intentionally placed together on the same team . . . Another distinguishing feature of multiage grouping is the fact that students from different grade levels remain not only in the same house or on the same team, but that they frequently are grouped within their classes without regard to grade level. Students remain with the team of students and teachers for three years, beginning and ending their middle school careers on the same team."

Multiage grouping allows students to interact across age groups and develop long-term relationships with students and teachers. Researchers have suggested that the formation of multiage classrooms allows teachers to structure learning activities to meet individual student needs, instead of teaching to the “middle” of the class (Daniel, 2007c; Hoffman, 2003). Few studies have been conducted on the benefits of multiage grouping on achievement at the middle level since 95 percent of U.S. students are educated in single-grade classrooms; however, preliminary research suggests that the practice may be linked to increased levels of self-esteem and decreased behavioral referrals (Daniel 2007c). It should be noted that teachers have reported it is more difficult to teach in multiage classrooms than in single-grade classrooms because multiage settings require more specialized preparation and classroom organization (Miller, 1991).

- **Small learning environments.** The National Forum to Accelerate Middle-Grades Reform (2004) has concluded that one reason for low levels of achievement in the middle grades is that too many students attend large, impersonal schools where they do not have the opportunity to develop meaningful relationships with adults and become increasingly alienated from their schools. The Forum believes that establishing small schools or small learning communities within large schools creates conditions that promote middle-level students’ success, including:
 - a more personalized learning environment that allows students to form meaningful relationships with both adults and peers;
 - smaller student-teacher ratios that allow educators to focus on active learning and problem solving; and
 - a collaborative professional culture that provides teachers with more time to discuss instructional practices and visit each other’s classrooms.

Most research indicates that small learning environments lead to more positive school climates, including higher levels of student engagement, fewer disciplinary referrals, higher levels of parent involvement and satisfaction, and increased student performance (Berry, 2004; National Forum to Accelerate Middle-Grades Reform, 2004; Duke & Trautvetter, 2001; Mertens et al., 2001; Lee & Loeb, 2000).

- **Exploratory programs.** Middle-level students need an extended curriculum that allows them to explore new areas of interest early in their educational careers. Supplemental to the basic curriculum, exploratory courses expose students to areas of learning that are usually not covered in the traditional curriculum, such as speech, drama, business, industrial arts, and career education (National Middle School Association, 2006; Anfara & Brown, 2000).
- **Co-curricular activities.** In high-performing middle-level schools, students are provided with age-appropriate co-curricular activities, career exploration programs, and opportunities to volunteer through service learning projects. These programs help students link their classroom experiences to their career goals and to the community. They also provide students with the opportunity to develop their talents and skills, learn about different careers, establish relationships with school personnel, and connect their knowledge and skills to real-life situations (Westmoreland & Little, 2008; National Association of Secondary School Principals, 2006; National Forum to Accelerate Middle-Grades Reform, 2006; National Middle School Association, 2006; Juvonen et al., 2004; Youniss & Yates, 1997).
- **After-school programs.** Every weekday afternoon, more than one-third of middle-level students are released from school and left to fend for themselves. Just six percent of these students are enrolled in after-school programs (Rinehart, 2008). The increase in the number of families with parents working outside the home has increased the need for after-school programs. Quality after-school programs include tutoring and supplementary instruction in the basic skills; homework help centers; enrichment activities; supervised recreation and athletic programs; and drug and violence prevention programs. Studies indicate that after-school programs provide young

adolescents the chance to obtain targeted academic support and develop meaningful relationships with adults (Rinehart, 2008; Westmoreland & Little, 2008; National Middle School Association, 2006; Bruce, 2001).

- **Highly qualified teachers.** Cooney & Bottoms (2002b) stated that making sure every middle grades classroom has a highly qualified teacher is the one practice that has the greatest impact on student achievement. Reformers have suggested the following strategies for ensuring that teachers are prepared and committed to teaching middle grades students:
 - Middle level educators need specialized preparation before they enter the classroom. Preparation should include training in academic content and adolescents' intellectual, social, emotional and physical development, as well as an internship at a middle-level school (Andrews et al., 2007; National Middle School Association, 2006; Mertens et al., 2005; Lipsitz et al., 1997b). Research has indicated that teachers who received specialized middle level preparation were more likely to use instructional practices linked to higher student achievement (Flowers & Mertens, 2003; Mertens et al., 2002).
 - Middle grades educators must have thorough knowledge of the subjects they teach (National Middle School Association, 2006; Cooney & Bottoms, 2003). Cooney & Bottoms (2002b) found that teachers with greater subject matter knowledge asked higher level questions and engaged students in more student-centered activities. Bottoms and Carpenter (2003) reported that two-thirds of middle grades teachers said they needed additional study in their content areas. Reformers have suggested that middle grades teachers be required to demonstrate mastery through a major or minor in a content area (Bottoms & Carpenter, 2003; Cooney & Bottoms, 2002b).
 - Bottoms and Carpenter (2003) have recommended that states establish middle grades certification requirements. Their research indicated that almost two-thirds of educators teaching at middle-level schools held elementary education certificates. Similarly, Mertens, Flowers, and Mulhall (2002) found that fewer than 10 percent of middle-level teachers were specifically certified to teach grades 6-8 students. The majority of teachers they surveyed were certified in elementary education, with the remainder prepared to work in high schools.

In Bottoms and Carpenter's studies, principals said they were more likely to hire teachers certified in elementary education because they were able to teach any subject without being considered out-of-field. However, Jackson, Andrews, Holland, and Pardini (2004) reported that middle-level teachers with elementary certification tended to be more nurturing but often had insufficient knowledge of advanced subjects; conversely, teachers certified in secondary education usually had stronger content knowledge, but a more limited understanding of middle-level students' developmental needs. Mertens, Flowers, and Mulhall (2005) found that teachers with elementary or middle grades certification reported engaging in more middle grades "best practices," such as interdisciplinary teaming, small group instruction, and hands-on learning. Teachers with secondary certification reported engaging in fewer middle grades "best practices."

- Middle-level schools should increase efforts to retain qualified teachers. Researchers have reported that teacher turnover is highest at the middle grades, often because teachers' initial training and certification are not at the middle grades level. Middle grades teachers are more likely to leave after their first year of teaching than teachers at other grade levels (Cooney & Bottoms, 2002a; National Center for Education Statistics, 2000). Cooney and Bottoms (2002a) found that fifteen percent of middle grades teachers left the classroom after one year, compared to 5 percent of early childhood teachers, 7 percent of elementary teachers, and 9 percent of secondary teachers.

- Middle-level educators should receive ongoing professional development. Professional development activities should focus on expanding and updating teachers' content knowledge and demonstrating research-based instructional strategies, with a focus on adolescent development and how to address the needs of diverse learners (National Association of Secondary School Principals, 2006; National Middle School Association, 2006; RAND Education, 2004; Bottoms & Carpenter, 2003; Cooney & Bottoms, 2002b). Middle-level teachers need a wide range of professional development options, including workshops, demonstrations, classroom observations, coaching, online tutorials, study groups, and structured discussions (NYC Coalition for Educational Justice, 2008; National Middle School Association, 2006; Flowers et al., 2002; Lipsitz et al., 1997b).

Flowers, Mertens, and Mulhall (2002) noted that professional development presents additional challenges during the school reform process, when teachers have additional training needs and there are a wider range of skills and topics to be addressed. They suggest that training activities be prioritized to reflect the reform schedule.

- Middle-level schools should form partnerships with local colleges and universities to establish professional learning communities that mentor both novice and experienced teachers and provide them with opportunities to increase their content knowledge (National Forum to Accelerate Middle-Grades Reform, 2006; National Middle School Association, 2006; Bottoms & Carpenter, 2003).
- Several reformers have called for incentive pay to attract and retain high quality middle-level teachers (NYC Coalition for Educational Justice, 2008; Bottoms & Carpenter, 2003; Cooney & Bottoms, 2002b).
- **Collaborative leadership.** Leithwood, Louis, Anderson, and Wahlstrom (2004) stated that "leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school." Characteristics of effective leaders include (Anfara, 2008; Andrews et al., 2007; Feldman & Ouimette, 2004; Cooney & Bottoms, 2003; Clark & Clark, 2000):
 - understanding the best practices for middle grades education;
 - building an inclusive learning community;
 - working with parents and all other stakeholders to ensure students' success;
 - clearly and consistently communicating the school's mission and vision;
 - promoting an atmosphere of collaboration and trust;
 - encouraging a climate of success in which all staff understand that every student counts;
 - modifying organizational structures to facilitate teaching and learning;
 - empowering teachers and administrators to work together to make decisions regarding students' educational experiences;
 - supporting ongoing professional development that is relevant to middle grades reform; and
 - taking responsibility for school improvement and student achievement.

Bottoms and Carpenter (2003) reported that many school districts use middle grades principalships as on-the-job training for future high school principals. They have urged school districts to select principals who are interested in working at the middle grades, not those who view the position as a stepping stone to another job.

- **Close relationships between students and teachers.** Middle-level teachers need to develop strong relationships with their students. Every student should be known well by at least one adult in the school (California Department of Education, 2006; National Middle School Association, 2006; Rich, 2005; French, 2003; Carnegie Council on Adolescent Development, 1989).

- **High expectations for all students.** Effective middle-level schools are characterized by high expectations for all students. Faculty expect high quality work from every student and are committed to helping them produce it (National Forum to Accelerate Middle-Grades Reform, 2006; National Middle School Association, 2006; Camblin, 2003). Research has shown that when adolescents believe their teachers care about them and expect them to learn at high levels, they work harder to meet those expectations (Scales, 1999).
- **Guidance and support services.** Middle-level schools need to provide students and their parents with ongoing guidance, information, and support as they select courses and make postsecondary plans (Wimberley & Noeth, 2005). Components of an effective middle grades guidance program include:
 - Advisory programs ensure that each student has opportunities to meet with an adult and plan his or her academic and social development (National Association of Secondary School Principals, 2006). Adult advisors are paired with students and meet with them regularly, serving as advocates and helping them with academic, career, social, and ethical issues. In addition to one-on-one meetings, students meet in small groups led by their common advisor (Andrews et al., 2007; National Association of Secondary School Principals, 2006; National Middle School Association, 2006; Cooney & Bottoms, 2003; Center for Prevention Research and Development, 2002a).
 - Each student should have a Personal Plan for Progress (National Association of Secondary School Principals, 2006; National Middle School Association, 2006). Cooney and Bottoms (2003) reported that students who had a five-year plan when they left middle school were more likely to succeed in high school. However, they also reported that 63 percent of middle-level teachers did not help students develop a personal high school plan.
 - Career planning helps students understand the academic preparation and work experience they will need to pursue their chosen career (National Middle School Association, 2006; Dahir, 2001). Educators must also explain to students and their families that certain courses will better prepare them for the high school curriculum and lead to higher levels of academic performance (National Middle School Association, 2006; Wimberly & Noeth, 2005; Camblin, 2003; Cooney & Bottoms, 2002a). Cooney and Bottoms (2002b) reported that high-performing students were more likely to talk with counselors several times during the school year about which classes to take in high school. Low-performing students who needed the most guidance in course selection were the least likely to have received such assistance.
 - Planning for postsecondary education and careers should begin early. Many students and their parents don't have the necessary information or personal support networks they need to engage in postsecondary or career planning activities. Twenty-four percent of eighth and ninth grade students report that they have not started to explore their postsecondary options (Wimberly & Noeth, 2005). The U.S. Department of Education, the National Association for College Admission Counseling, and the National Association of Secondary School Principals all recommend that students begin planning for college as early as sixth grade. Low-income families are more likely to lack the necessary tools and resources for planning and often rely primarily on schools for information and guidance (Wimberly & Noeth, 2005).
- **Policies that foster health and wellness.** High performing middle-level schools engage in school-wide efforts and policies that promote health, wellness, and safety. Programs and services should include health education; comprehensive fitness programs; collaborations with local health and social support agencies; nutrition services; mental health services; violence and risky behavior prevention programs; and health promotion for staff members (Andrews et al., 2007; California Department of Education, 2006; Mertens & Anfara, 2006; National Forum to Accelerate Middle-Grades Reform, 2006; National Middle School Association, 2006).

- **Extra help.** Districts and schools should provide extra time and high-quality extra help to students who need assistance in meeting high academic standards. Struggling students should be identified as early as possible to increase their instructional time in reading, English, and math (National Forum to Accelerate Middle-Grades Reform, 2006; Cooney & Bottoms, 2003; Bottoms & Carpenter, 2003).
- **Supportive climate.** The National Middle School Association (2006) has stated that effective middle-level schools are characterized by an inviting, supportive, and safe environment that promotes learning and encourages the development of positive relationships. Healthy learning environments are created by ensuring the following (NYC Coalition for Educational Justice, 2008; Drew, 2007; California Department of Education, 2006; Juvonen et al., 2004; RAND Education, 2004; Lewis, 2000; Lipsitz et al., 1997b):
 - school facilities are safe;
 - behavioral expectations and rules are clearly understood;
 - teachers are recognized for their accomplishments;
 - discipline policies focus on preventing problems and creating a culture that does not tolerate inappropriate or antisocial behavior; and
 - teachers are trained in conflict resolution and anti-bullying.
- **Collaboration with high schools.** Educators must recognize that schooling is a continuum and ensure a smooth transition as students progress from school to school (National Association of Secondary School Principals, 2006). Many middle-level teachers don't know what high school teachers expect and many high school teachers don't know what is being taught in the middle grades (Bottoms & Cooney, 2003). Reformers have provided the following suggestions to increase collaboration between middle-level and high school personnel (California Department of Education, 2006; Smith, 2006; Bottoms & Cooney, 2003; Zeedyk et al., 2003):
 - Middle-level and high school teacher teams can meet regularly to determine the knowledge and skills middle-level students will need to be ready for high school.
 - High school staff can share examples of course assignments, homework, and assessments with middle-level principals and teachers.
 - Middle-level educators should be informed about how many of their students are placed in college preparatory high school courses and how they perform. This information can be used to refine their instructional techniques.
 - Middle-level students and their families can be provided with information about the academic, social, and organizational similarities and differences between middle-level schools and high schools. Middle-level students can spend a day with high school students and high school students and teachers can visit middle-level schools.

Cooney and Bottoms (2002b) found that only 54 percent of eighth grade students who expected to graduate from college enrolled in the necessary ninth grade college preparatory math courses; in English and science, only 29 percent and 11 percent of eighth grade students who expected to graduate from college enrolled in the necessary ninth grade college preparatory classes. However, middle schools and high schools that worked together realized higher enrollment rates: 80 percent of eighth grade students who expected to graduate from college enrolled in ninth grade college preparatory math courses; 62 percent enrolled in college preparatory English courses; and 43 percent enrolled in college preparatory science courses.

- **Family and community involvement.** Effective middle-level schools engage families, community members, businesses, local organizations and colleges and universities as partners in supporting students' educational experiences (California Department of Education, 2006; National Middle School Association, 2006).

Even though research suggests that parent involvement has a positive impact on student achievement, the number and strength of school-family partnerships declines as students progress through school and shows the most dramatic decrease at the middle grades (National Middle School Association, 2006; Pate & Andrews, 2006; RAND Education, 2004; Juvonen et al., 2004; Billig, 2001). Schools can increase family and community support by engaging in the following activities (Austin Independent School District, 2008; Andrews et al., 2007; National Forum to Accelerate Middle-Grades Reform, 2006; Pate & Andrews, 2006; Swaim, 2003; Juvonen et al. 2004; Billig, 2001; Mulhall et al., 2001; Rutherford et al., 1995):

- communicating with parents to provide them with information about the school's academic standards and their children's progress;
- helping parents understand the connection between parenting skills and their children's success in school;
- emphasizing the critical role families play in building positive attitudes toward education;
- using parents as an educational resource, both for curricular and co-curricular programs (for example, serving as volunteers, tutors, and mentors);
- providing parental training in strategies that support school efforts, such as workshops on how to facilitate learning at home, how to communicate with a middle-level child, and how to serve as an advocate for a child; and
- providing parents and families with educational opportunities, such as adult education and GED courses.

Effective middle-level schools also develop relationships with local organizations and businesses to expand and enhance students' educational experiences (National Association of Secondary School Principals, 2006; National Forum to Accelerate Middle-Grades Reform, 2006; Swaim, 2003; Rutherford et al., 1995). The National Middle School Association (2006) concluded that the community functions as an extension of the classroom when adults show students how to apply their knowledge and skills in authentic settings through activities such as job shadowing, apprenticeships, field trips, and mentor relationships. Rutherford, Anderson, and Billig (1995) suggested that schools regularly invite community members to participate in school activities and communicate directly with them through local news media, brochures, and newsletters.

- **Data-based decision making.** High performing middle-level schools hold themselves accountable for their students' success. They collect, analyze, and use data to guide program and policy decisions. School staff must have access to data that reveal the extent to which reform strategies are being implemented and the impact these strategies have on student performance (National Forum to Accelerate Middle-Grades Reform, 2006; National Middle School Association, 2006; French, 2003; Lipsitz et al., 1997b).

Research on Middle Grades Reform

Studies have suggested that students attending schools engaged in middle grades reform have fewer behavioral problems and increased levels of self-esteem and academic engagement. Research on the impact of middle grades reform on student achievement, however, has yielded conflicting findings. There are an insufficient number of studies, a lack of longitudinal studies, weak research designs, difficulties comparing studies with conflicting designs, and unknown effects of confounding variables on outcomes. Furthermore, although some studies report higher levels of performance at program schools, as compared to control schools, many fail to specify if these differences are statistically significant. It is, therefore, difficult to draw conclusions with regard to the impact of middle grades reform on student achievement (Byres & Ruby, 2007; Brown et al., 2004).

Keeping the above limitations in mind, following is a summary of research findings on the impact of middle grades reform on student outcomes.

- **General middle grades reform.** Lee and Smith (1992) conducted one of the first studies examining the relationship between implementation of middle-level reform practices and student outcomes based on a large-scale sample. The researchers used a subsample of data from the National Longitudinal Study of 1988 that included 8,845 eighth grade students from U.S. public and private schools. They found that schools introducing reforms, such as interdisciplinary team teaching and heterogeneously grouped instruction, reported a modest but positive impact on eighth grade students' achievement and engagement. Students attending schools that introduced a larger number of reform elements had higher levels of academic engagement than students attending schools that introduced fewer reform elements. Reforms also contributed to a more equitable distribution of positive outcomes among students from different social backgrounds.

Lee and Smith (1992) also found that school size played an important role in students' levels of engagement, with students in schools that had larger eighth grade enrollments reporting lower levels of academic engagement. Contrary to expectations, middle-level reform efforts were associated with significantly higher levels of at-risk behaviors. The authors suggested that school restructuring may have been more likely to occur in schools with higher initial levels of at-risk behaviors.

- **Turning Points.** The *Turning Points* program focuses on strengthening students' achievement and socio-behavioral development by establishing a rigorous curriculum, creating a supportive environment, providing a significant adult relationship for every student, and promoting mental health and fitness (Davis & Jackson, 2000). Although most studies have reported that implementation of the *Turning Points* program leads to increases in students' scores on state achievement tests (Association of Illinois Middle-Level Schools, 2004; Mertens & Flowers, 2004b; Backes et al., 1999; Felner et al., 1997), the Center for Prevention Research and Development (2002b) reported that students attending *Turning Points* schools performed at or below average on state achievement tests.

Evaluations of the *Turning Points* program have linked implementation of the program to higher than average levels of self-esteem, academic engagement, and academic efficacy; fewer reports of depression; lower frequencies of problem behaviors; and increased student bonding with and commitment to their schools (Association of Illinois Middle-Level Schools, 2004; Mertens & Flowers, 2004b; Center for Prevention Research and Development, 2002b; Center for Prevention Research and Development, 2002c; Felner et al., 1997).

- **Making Middle Grades Work.** The *Making Middle Grades Work* (MMGW) program was established by the Southern Regional Education Board. States build a "comprehensive improvement framework" that becomes the basis for statewide middle grades reform. Components of the "comprehensive improvement framework" include a rigorous academic curriculum; high expectations and a system of extra help and time; classroom practices that engage students in their learning; support from parents; qualified teachers; and strong leadership. Sixteen states, including Florida, participate in the program (Cooney & Bottoms, 2002b). Studies conducted on the impact of MMGW reforms on student achievement have reported that students attending program schools had significantly higher student achievement in reading and math, compared to schools nationally (Cooney & Bottoms, 2003).
- **Middle Start.** *Middle Start* is a reform initiative that was established by the W.K. Kellogg Foundation and the Academy for Educational Development in 1994, in collaboration with the Center for Prevention Research and Development at the University of Illinois and other Michigan-based organizations and agencies. Originally implemented in Michigan middle schools, the program has since expanded to Arkansas, Louisiana, Mississippi, and New York. *Middle Start* seeks to promote academic excellence, developmental responsiveness, and social equity for students in the middle grades. The program focuses on the development of small learning communities; varied, rigorous, and culturally appropriate curriculum and instruction; and parent and community involvement (Middle Start, 2007).

Studies conducted to determine *Middle Start's* impact on student achievement have produced mixed results. Some studies reported that students attending *Middle Start* schools posted greater achievement gains than students attending control schools (Center for Prevention Research and Development, 2005a; Center for Prevention Research and Development, 2005b; Mertens & Flowers, 2003; Gopalan, 2001; Mertens et al., 1999). Other studies found no significant differences between *Middle Start* and control schools' achievement gains (Corbett & Wilson, 2006; Center for Prevention Research and Development, 2005c). The Center for Prevention Research and Development (2002a; 2002c; 2002d) reported that students attending *Middle Start* schools in Arkansas, Louisiana, and Mississippi kept pace with schools statewide on standardized achievement tests, even though state averages included many more affluent schools.

Evaluations of the *Middle Start* program have associated program implementation with increases in students' levels of self-esteem, academic engagement, and academic efficacy and with fewer reports of student depression. Students attending *Middle Start* schools have also reported higher educational expectations of themselves than they had prior to program implementation. Some studies have linked program implementation to a decrease in behavioral problems and suspensions, while other studies have reported few changes in behavioral referrals. Several studies found that students attending *Middle Start* schools reported a greater sense of belonging and safety in school, while others found no changes in students' ratings of school climate (Center for Prevention Research and Development, 2002a; Center for Prevention Research and Development, 2002c; Center for Prevention Research and Development, 2002d; Gopalan, 2001; Mertens et al., 1999).

Teachers engaged in interdisciplinary teaming at *Middle Start* schools reported they viewed their schools as more positive, rewarding, and satisfying places to work; believed they received recognition for their accomplishments more often; felt a stronger sense of affiliation with their fellow team members; and had higher levels of overall job satisfaction (Flowers et al., 1999).

Grade Configuration

The debate over how to configure schools housing middle-level students has intensified in recent years, with some researchers and practitioners challenging the rationale of a separate middle school and many districts converting their middle schools into K-8 schools (Byrnes & Ruby, 2007; Cook et al., 2007).

The amount of research that has been conducted on grade configuration is quite small, considering how widely the policy of K-8 conversion is being adopted across the U.S. Studies that have compared middle schools to K-8 schools have reached no definitive conclusions regarding which school structure is most beneficial to students (Turner & Protheroe, 2004; Coladarci & Hancock, 2002; Howley, 2002; Pardini, 2002; Renchler, 2000; Paglin & Fager, 1997). In general, some research has shown that students attending K-8 schools have higher levels of academic achievement, compared to students attending middle schools (Poncelet and Metis Associates, 2004; Connolly et al., 2002; Offenber, 2001; Franklin & Glascok, 1998; Wihry et al., 1992). Other studies, however, have found no differences between the achievement levels of students attending middle schools and K-8 schools (Weiss, 2008; Byrnes & Ruby, 2007).

One factor that may contribute to more positive outcomes at K-8 schools is school size. In general, middle schools tend to have larger student enrollments than K-8 schools. Research suggests that, as the number of students in K-8 schools increases, the performance of students in the two types of schools converges (Howley, 2002; Offenber, 2001).

A second factor to be considered when comparing middle schools and K-8 schools is the number of school transitions students must make. Research suggests that the absence of school transitions

and the greater continuity of experience may help to explain the results of studies that have found more positive outcomes at K-8 schools. Studies on the transition from elementary to middle school and from middle to high school have shown that students experience a decrease in achievement, an increase in behavioral problems, and increased feelings of anonymity upon their arrival at a new school. Every transition from one school to another appears to disrupt learning (Cook et al., 2007; Smith, 2006; Coladarci & Hancock, 2002; Howley, 2002; Alspaugh, 1998; Paglin & Fager, 1997; Graber & Brooks-Gunn, 1996). Alspaugh (1998) found that double transitions (when students moved from elementary to middle and then from middle to high school) resulted in greater achievement losses and higher dropout rates than single transitions (from K-8 school to high school). Heller and associates (2003) found that transition programs that carefully introduced students to the new environment reduced school failure rates. Falbo, Lein, and Amador (2001) reported that students whose parents monitored their activities and became involved at their schools were more likely to experience smooth transitions from middle to high school. Keeping the majority of a student's peer group intact when students enter high school was found to have a positive effect on high-achieving students' grade point averages, but the opposite effect on low-achieving students (Schiller, 1999).

Several studies have reported that students attending K-8 schools have higher levels of self-esteem, more positive attitudes toward school, and fewer incidents of disciplinary infractions than students at middle schools (Weiss, 2008; Cook et al., 2007; Howley, 2002). Connolly, Yakimowski-Srebnick, and Russo (2002), however, found that students attending K-8 schools were often provided with fewer opportunities to take advanced courses such as Algebra I and foreign languages than students attending middle schools.

Results from grade configuration studies should be treated with caution. Most research is based on case studies or anecdotal evidence. Although many studies controlled for confounding variables such as students' socioeconomic status, parents' level of educational attainment, and school size, other unmeasured factors might have been responsible for the observed outcomes. Clearly, more research is needed to determine how grade configuration impacts students' academic and behavioral outcomes before school districts continue their widespread conversion of middle schools to K-8 schools (Byrnes & Ruby, 2007; Coladarci & Hancock, 2002; Renchler, 2000; Paglin & Fager, 1997).

Perhaps most importantly, researchers have concluded that the quality of programs and policies, not grade configuration, determines the effectiveness of middle grades education. They emphasize that effective practices can be implemented in a variety of grade configurations. In addition, each community must consider different factors when making grade span decisions and no one particular configuration will necessarily match the needs of every school district (National Association of Secondary School Principals, 2006; Swaim, 2003; Hooper, 2002; Lipsitz et al., 1997b; Paglin & Fager, 1997).

On A Local Note

In the fall of 2007, Paul George (2007) conducted a survey of Florida middle school principals and district directors of secondary education regarding the status of middle school programs throughout the state. Survey responses indicated that many of the essential components of effective middle school programs are disappearing from Florida's middle schools. The majority of respondents reported that three key components of effective middle schools are widely implemented: shared decision-making, active learning styles, and selection of teachers based on interest and skill in working with young adolescents. However, respondents reported that interdisciplinary team organization, advisory programs, curriculum enrichment and exploratory programs, flexible scheduling, and heterogeneous grouping are all offered less frequently than in past years. Respondents identified testing and accountability measures as the primary reason for this decline. Other factors cited by respondents as contributing to the decline in middle school program implementation included state legislation aimed at secondary school reform, components of the No Child Left Behind act, Florida's Class Size Reduction Amendment, union contracts, inadequate pre-service education, and lack of certification and professional development.

Miami-Dade County Public Schools (M-DCPS) established a Middle Grades Task Force in March 2008. The charge of the Task Force was to “. . . review the literature, research, and best practices pertaining to closing the achievement gap in the middle schools and create an action plan for the revitalization of our middle schools.” The Task Force is comprised of individuals who have expertise in and a strong commitment to middle level education, including parents, teachers, administrators, community and business members, union representatives, and higher education administrators.

The Task Force divided into four subcommittees and each subcommittee focused on one of the following four key areas:

- **Curriculum, Instruction, and Assessment.** Ensure that all middle level students participate in challenging, standards-based curricula and engaging instruction, and that their progress is measured by appropriate assessments, resulting in continual learning and high achievement.
- **Quality Educators.** Support the recruitment and hiring of teachers and administrators who have strong content knowledge and the ability to use research-based instructional strategies and assessment practices appropriate for middle level students.
- **Organization.** Support organizational structures and a school culture of high expectations that enable both middle level students and educators to succeed.
- **Family and Community.** Develop ongoing family and community partnerships to provide a supportive and enriched learning environment for every middle school student.

When the Task Force concludes its current deliberations, a final report will be issued with recommendations to the district on how to improve middle school education. For additional information on M-DCPS' Middle Grades Task Force, contact Curriculum and Instruction at (305) 995-1451.

Summary

Educators and researchers have long debated the most effective way to deliver middle-level education. This debate has traditionally revolved around claims that programs either focus too heavily on developmental factors at the expense of academics or emphasize academics without considering students' developmental needs. Researchers have identified components of successful middle-level reforms, such as flexible scheduling, interdisciplinary teaming, multiage grouping, and the provision of comprehensive guidance and support programs.

Research on the impact of middle grades reform on students' academic achievement has yielded conflicting findings. However, studies do suggest that students attending schools engaged in middle grades reform have fewer behavioral referrals and increased levels of self-esteem and academic engagement.

As part of the middle grades reform movement, many school districts throughout the country have converted their middle schools into K-8 schools; however, research has not offered definitive conclusions regarding which school structure provides students with the most benefits. Two factors that appear to contribute to positive student outcomes frequently observed at K-8 schools are their typically smaller size and the continuity of experience they offer. Most importantly, researchers have concluded that the quality of programs and policies, not grade configuration, determines the effectiveness of middle grades education.

All reports distributed by Research Services can be accessed at <http://drs.dadeschools.net> under the “Current Publications” menu.

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